

COMPUTER SCIENCE

in

ARKANSAS



WINNERS OF STATE CODING COMPETITION

Governor Asa Hutchinson announced the winners of the Fifth Annual Governor's All-State Coding Competition, which was held on May 1, 2021, at the University of Arkansas in Little Rock's Donaghey Student Center. Students at the Don Tyson School of Innovation in Springdale received the first-place prize, students at Rogers New Technology High School received second place, and students from eStem High School in Little Rock received the third-place honor.

"For the fifth straight year, this competition has inspired impressive solutions from Arkansas' top computer science students," Hutchinson said. "Their work reinforces my confidence that these students will be more than well prepared to take the reins of leadership. When you consider the caliber of the five teachers we recognized, it's no surprise that we are seeing this excellence in our computer science students."

The winning team, Lucas Kellar, Luke Lyons, and Drake Mayes from the Don Tyson School of Innovation, each received a 529 college savings plan prize worth \$2,000. Joshua Willard, Aldan Garner, and David Daniel of Rogers New Technology High School each received a 529 college savings plan prize worth \$1,000 for second place, and Elijah Keen, Spencer Knight, and Sergio Markin of eStem High School each received a 529 college savings plan prize worth \$500 for third place. In addition to the individual awards, winning schools received \$10,000, \$6,000, and \$4,000 respectively, to support their computer science programs.

Since the contest's 2016 inaugural year, Verizon has provided \$225,000 in financial support for the competition. More than 100 teams from across the state participated in this year's digital regional competition. The top 16 teams from that regional event along with a team from last year's first-place school received invitations to compete in the 2021 competition.



2021 COMPUTER SCIENCE EDUCATOR OF THE YEAR NAMED

In addition to announcing the contest winners at the Fifth Annual Governor's All-State Coding Competition, Ashley Kincannon, a teacher at Lake Hamilton Junior High School, was named the 2021 Arkansas Computer Science Educator of the Year. In addition to receiving a \$2,500 finalist award, Kincannon will receive an additional \$12,500 award from the Arkansas Department of Education's Office of Computer Science.

Hutchinson also recognized the other four finalists at the event.

- Carl Frank - Arkansas School for Mathematics, Sciences, and the Arts
- Kimberly Raup - Conway High School (Conway School District)
- Stacy Reynolds - McGehee High School (McGehee School District)
- Lauren Taylor - Dardanelle High School (Dardanelle School District)

To see all the photos taken from the event, visit the following links:

CSforAR's Flickr Page for the Competition:

<https://www.flickr.com/photos/185926334@N02/albums/72157719139967200/page2>

CSforAR's Facebook Photo Album for Competition:

<https://www.facebook.com/media/set/?set=oa.5459455954125263&type=3>



DRONE LICENSURE

Whether you are wanting to capture live events, survey dangerous areas, cover news events, work with disaster relief, help manage trees and forestry, create eye-catching commercials for tourism, capture live sports, or manage security; drones are involved in all of these and even more. Today's world is discovering more uses for drones than ever before, and those students interested in learning to fly a drone can lead to a good job or even their own business.

Leslie Savell and Jim Furniss, two statewide Computer Science Specialists, recently passed the Part 107 exam requirements to become certified drone pilots. The demand for licensed pilots will continue to grow as the cost of drones decrease and the ability of drones to capture photo and video increase. This month, the Federal Aviation Administration (FAA) introduced new rules, '[Operations Over People](#)', which allows drone pilots under specific conditions, varied on the level of risk, to fly over people and moving vehicles. Also covered in this section is the ability to fly at night under certain conditions.

Our specialists not only keep their CS trainings relevant, but continue to build on the requests of Arkansas educators and the excitement of students. If you are interested in professional development in this area, or building a drone program for your students, please contact the CS Specialist team at CSforAR@ade.arkansas.gov.



CS Specialist Leslie Savell

2021 ARKANSAS COMPUTER SCIENCE AND COMPUTING EDUCATOR ACADEMY PUBLIC UNIVERSITY PARTNER AND DATE ANNOUNCEMENT

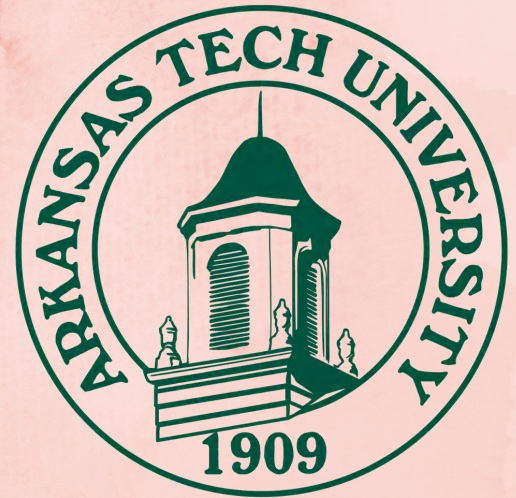
On March 15, 2021, the Arkansas Department of Education (ADE) Office of Computer Science announced, via [Commissioner's Memo COM-21-098](#), the 2021 Arkansas Computer Science and Computing Educator Academy (ACSCEA) and requested proposals for a public university partner. Two submissions were received by the ADE Office of Computer Science in response to the request for proposals (RFP). A committee with representation from K-12, postsecondary, ADE, and the Governor's Office, reviewed both submissions and made an unanimous recommendation to Secretary Johnny Key prior to the ADE's announcement of partner university.

The ADE announced that the inaugural ACSCEA Public University Partner will be Arkansas Tech University (ATU) in Russellville, Arkansas. A copy of the description section from the proposal from ATU is attached to the Commissioner's Memo.

Individuals completing the 2021 ACSCEA successfully, to both ATU's and ADE's requirements, will be eligible to receive credit for INFT 5403 Introduction to Information Technology and Systems (three credit hours) and INFT 6903 Emerging Trends (three credit hours). These six hours of graduate-level credit are aligned to two of the courses within ATU's Master of Science in Information Technology - Computer-Based Instructional Technology (MS-CBIT). This degree program is housed within the College of Engineering and Applied Sciences within the Department of Computer and Information Science.

In addition to the six graduate-level hours, participants who successfully complete the 90 hours of training, and hold an Arkansas Educator's License, will be awarded a 5016 Computer Science Approval Code. Individuals using this training to meet requirements for technical permits, will be required to complete all other requirements before a 5013 or 5014 Computer Science Technical Permit may be awarded. Additional information on the Computer Science Approval Code and Technical Permits can be found under the "Licensure Requirements of the ADE Approved Computer Science Courses" section of the ADE Computer Science Fact Sheet found here:

<http://csforar.info/Licensure>



ADE will provide ATU a finalized list of selected participants and their contact information. ATU will send selected participants a link to apply for admission to the Arkansas Tech Graduate College, which is a requirement to be awarded the six hours of credit. Funding provided by ADE will pay for participants' application and tuition fees for these six hours.

The ACSCEA is restricted to Arkansas residents who are either employed by an Arkansas public school district or intend to teach within an Arkansas public school district. All applicants must submit a letter of support from a Superintendent of an Arkansas Public School District for consideration. The summer 2021 cohort is limited to 100 candidates. Candidate selection may be prioritized based on regional needs and for districts that are classified as high-poverty. The application window is open now and will close at 11:59 p.m. on May 30, 2021.

Interested candidates must apply at: <https://www.surveymonkey.com/r/CSforARAcademyApp>

ARKANSAS STATE UPSKILL PATHWAY AND PROGRAM EXPANSION

The Arkansas Department of Education (ADE) Office of Computer Science announced the expansion of our partnership with the Arkansas Public School Resource Center (APSRC) and Arkansas State University (AState) to deliver high quality computer science and computing concurrent credit courses through AState's UpSkill program.

UpSkill is an online learning opportunity administered by AState for high school students who desire to develop a variety of in-demand job skills. This program offers students an affordable, flexible and convenient learning experience to develop skills that expand their future opportunities in a growing digital world.

In addition to the Swift Coding pathway, UpSkill is adding two additional computer science and computing pathways. These pathways, Android Development and Game Production & Development, are each composed of three college-level courses. Swift Coding, along with the two new pathways, will be available for students to begin in the Fall of 2021. Additional information on these pathways and registration directions can be accessed at: <http://www.astate.edu/a/global-initiatives/outreach/upskill/programs/>

The ADE Office of Computer Science is providing funding to APSRC to cover the enrollment and tuition fees for 250 high school students accepted into UpSkill for the 2021-2022 school year. Each program will be taught online in seven-week increments. Students will receive nine college credit hours upon successful completion of any of the three programs.

The ADE has approved all nine of these concurrent credit courses to be eligible for weighted concurrent credit in computer science. In the interest of consistency and fairness, students that were enrolled in and completed the Swift Coding pathway courses during the 2020-2021 school year, may be retroactively awarded weighted credit.

Public schools interested in enrolling students for this one-of-a-kind program are required to complete a Memorandum of Understanding (MOU) which can be found via [Commissioner's Memo COM-21-118](#). Once the MOU is completed, a school representative-either a school counselor or other designee-will need to assist the student in completing an AState application for admission.

Completed MOUs and questions should be submitted to APSRC at 501-492-4300 or by email to Joie Ketcham at jketcham@apsrc.net.

Grant funding for this program is provided by the ADE as part of Governor Asa Hutchinson's Computer Science Initiative, and is subject to the availability of funding and allowable appropriation of funds.



2021 VEX ROBOTICS STATE CHAMPIONSHIPS

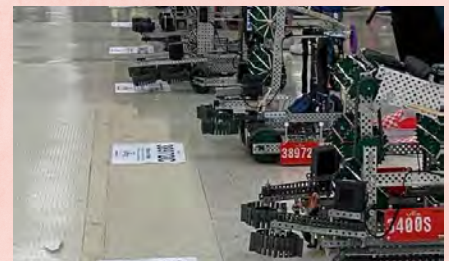
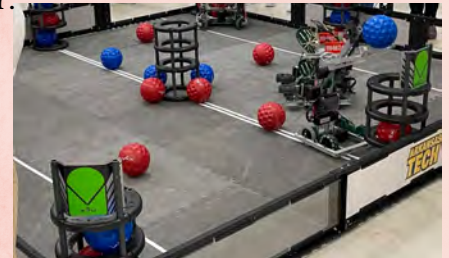
Even a pandemic couldn't stop students from doing what they love. During the second week of April, Robotics teams from all around the state competed in a tournament to determine who was the best of the best. Teams of students from elementary to high schools competed in the 2021 VEX Robotics State Championships. This championship featured robots that were constructed, tested, and rebuilt numerous times throughout the school year to solve specific tasks and score points based on those tasks.

In the VEX IQ tournaments, students were challenged, in a game called Rise Above, to build and program robots that were capable of moving and stacking "risers", which were scored in goals, with additional points granted for stacked risers or risers set in rows.

The Middle and High School VEX Robotics Competition challenged students, in a game called Change Up, to build and program robots to score balls in goals that were set up like a game of tic-tac-toe, where each goal could hold up to 3 balls. Additional points were awarded for having the correct color of ball at the top of each stack. Robots were able to be operated as autonomously or by the control of a driver.

Students also competed in a skills portion of the competition where their robot attempted challenges on a field without any other teams present. The team with the highest number of points in this category was eligible to move on to the World Championship.

Other awards given for the Middle and High School VEX Robotics Competition that advanced teams to the World Championship were Tournament Champions, Tournament Finalists, the Excellence Award, and the Design Award. For VEX IQ participants, Teamwork Champion awards for the top 3 pairs of teams, the Innovate Award, Excellence Award, Design Award, and Skills Champion all advanced teams to the World Championship.



RELEVANCE (noun): The quality or state of being closely connected or appropriate.

Do students ever ask "When will I ever use this" in your class? If so, they are asking for the relevance of school standards to future career paths.

Learning Blade developed its mission to address these questions by showing students how math, science, and English standards relate to future CS and STEM career pathways.

For example, Learning Blade's "Intro to Computer Science" unit is a 2-hour long series of lessons to introduce students to the career paths in CS such as Information Security Analyst, Computer Programmer, Database Administrator, Interface Designer, Web Developer, Mobile App Developer and more.

Need help getting started? Looking for engaging content for your summer learning programs? Email info@learningblade.com or request your school's free license at www.learningblade.com/AR



Learning Blade Corner - a monthly snapshot of happenings with Learning Blade in AR.

COMPUTER SCIENCE AND COMPUTING IN ARKANSAS: DEFINING THE INITIATIVE

This article was written by State Director of Computer Science, Anthony Owen.

The Association for Computing and Machinery defined computer science as “the study of computers and algorithmic processes, including their principles, their hardware and software designs, their [implementation], and their impact on society” within their 2003 K-12 Computer Science Task Force Report on Curriculum.

In 2015, Governor Hutchinson and the 90th General Assembly launched the Arkansas Computer Science Initiative with the passing and signing of Act 187, which required every high school to offer at least one computer science course. In the early years, the initiative was largely based around programming (or “coding” as it is colloquially known). Now in 2021, our initiative has transformed from a Computer Science “coding” Initiative to a Computer Science and Computing Initiative, which continues to grow in its understanding and addressing of regional, state, and national economic needs and technological trends.

The Arkansas Computer Science and Computing Initiative has conducted two full revisions of its standards and courses, first in 2016 and again in 2020. The nine course pathways, composed of more than 55 state developed courses, adopted in 2020 (for school implementation beginning in the fall of 2021) demonstrate an expansion from the 2003 definition listed above, as well as our state’s desires for its populace. While the nine diverse pathways include the more traditional areas of computer science such as programming, networking, computer engineering, and cybersecurity, they also include emerging and high-growth fields such as artificial intelligence, machine learning, data science, mobile application development, game design, and game development.



Not only has Arkansas expanded the availability of a variety of courses for students and schools, but the 2020 Computer Science Standards Committee met the challenge of writing first-year courses that were composed of “standards and skills that every high school student should learn before graduating.” This was achieved through the committee’s attention to ensuring all of the newly-designed Arkansas Computer Science and Computing courses focused on teaching skills such as: computational thinking, problem solving, utilizing and understanding digital data, appropriate digital literacy and cybersecurity concepts, developing algorithms and programs as solutions to problems, and developing an understanding of how the devices and services they will utilize --in all careers-- function, including how to use and interpret other’s use of them, in a meaningful and professional way to further knowledge.

In addition to the technical skills found within these courses, students are expected to exhibit proficiency in skills that are required for professionals in almost every field.

Both academia and industry representatives indicated in both the 2020 Governor's Computer Science and Computing Task Force and the 2020 Computer Science Standards revision meetings the crucial need for students to enter their realms with the ability to effectively communicate, especially in terms of explaining their problem-solving strategies as well as their results and solutions. They also remarked that the workforce of the future must work collaboratively with a varied team and be able to utilize various technologies to accomplish a myriad of tasks. Ultimately, students will need to be able to present their data-driven solutions in a clear and ethical manner to a variety of audiences including businesses, industries, civil agencies, government, and the general public.

These same representatives highlighted additional skills that are necessary, especially in technical careers. Students are expected to embrace professionalism by demonstrating skills and behaviors necessary for success in technical careers, including comprehending and considerations of their actions and the subsequent consequences. Students will also encourage and reflect diversity. Students will exemplify perseverance, and will strive to overcome failure, as it is a means to reflect, learn, and develop further.

COMPUTER SCIENCE AND COMPUTING IN ARKANSAS: DEFINING THE INITIATIVE CONTINUED

In addition, the expectation is that students and professionals in the field will understand and exhibit problem-solving strategies that are crucial for their success in the future, regardless of the degree of technicality of their occupation. They will be able to identify patterns, decompose complex problems into manageable steps, and construct algorithms accordingly. They will also be proficient in researching the underlying causes of, novel approaches for, and the solutions to problems yet known.

Defining the Arkansas Computer Science and Computing Initiative is not an easy task; however, the definition is best found in the results, actions, and focus of the state. Since 2015, the purposeful actions have always intended to propel and keep Arkansas students and its populace on the forefront of using and understanding technology in productive ways that will provide citizens with lucrative career opportunities for themselves, their families, and their neighbors, and continue to push the economy of Arkansas as its citizens transverse through the fourth and fifth industrial / technological revolutions.



The ultimate focus of the Arkansas Computer Science and Computing Initiative is on driving students' understanding of how computers, computer systems, and applications work independently and in conjunction and expanding students abilities/knowledge base to be able to both utilize technology effectively as per its design, and also push the technology beyond its original design to create new knowledge, understanding, and applicability.

UPCOMING SUMMER CAMPS

ASTATE COLLEGE OF ENGINEERING AND COMPUTER SCIENCE SUMMER CAMPS

Arkansas State University, with support from Continental Utility Solutions, Inc. (CUSI) of Jonesboro, will host a week-long coding camp for rising 10th, 11th, or 12th grade students. These camps will be held June 7 - June 11th and also June 21 - June 25th, 2021 from 9 a.m. to 4p.m. each day. The camp will host 30 participants each week at Arkansas State University in Jonesboro. Visit their [website](#) for more information.

UCA/ACXIOM IT CAREERS CAMP

The UCA/Acxiom IT Careers Camp is designed to heighten students' interest in an Information Technology career – which is working with computers and related technology. Any student who will enter 9th grade through 12th grade in the Fall of 2021 may apply. The camp is completely free! The deadline to [apply](#) is May 28, 2021. For information regarding the camp, you can visit their website at <https://uca.edu/itcamp/>.

ALMA SCHOOL DISTRICT: TEEN TECH ACADEMY

Teen Tech Academy is a place where students can explore topics of interest that are not typically studied in the regular classroom during the school year, commuter program. There will be three areas that are heavily focused on: Robotics, Coding, and investigative STEM activities. All three topics will provide experiences for students, and basic to advanced levels will be covered in each topic. The camp is for rising 7th and 8th grade students, and will be held on June 7-10 and June 14-17, 2021. For more information, please visit <https://www.almasd.net/Page/3417>.

SUMMER STEM ACADEMY AT UCA

The 2021 Summer STEM Academy at the University of Central Arkansas is a one-week commuter program that provides students opportunities to deepen their understanding of microbiology and experimental design. Each day, participants will explore three integrated modules: Microbiology, Data Analysis and Visualization, and Experimental Design and Empirical Modeling. The camp is for rising 9th, 10th, or 11th grade students and will be held on June 14-18, 2021. Visit <https://uca.edu/math/msit/> for more information.

THE ARKANSAS GENCYBER STRENGTH TRAINING PROGRAM

The University of Arkansas at Little Rock (UALR) is excited to announce their first-ever GenCyber Camp in Arkansas. Students will learn how to think like a hacker and stop cyber criminals in their tracks. The speaker each day is a world-renowned cybersecurity expert and participants will have access to top hands-on cybersecurity training in the region.

This camp is open to students nationwide at no cost, but space is limited. Students must submit an application to be considered. Prior experience is not necessary, and applications will be evaluated on students' desire to be challenged and their willingness to learn. The camp will be held July 12 - 23, Monday through Friday from 9am - 12pm. Rising students in grades 7-12 can attend in person or virtually.

In addition to looking for students, UALR is looking to hire cybersecurity teachers for the camp. Experience and knowledge in cybersecurity is not required, but will be helpful. An Arkansas teaching license is a plus.

There will be a required 2-day training/PD on July 7 - 8, 2021. The camp is being held on the UALR campus, but will have a live stream/virtual option for both teachers and participants. Teachers will be paid \$1330 for the 2 days of training, and 30 hours of camp instruction.

For more information, visit the [UALR website](http://ualr.edu). Students should apply at <http://bit.ly/ARGenCyber> and educators can fill out an application at [GenCyber Teacher Application](http://ualr.edu/genCyberTeacherApplication). For further questions, email Sandra Leiterman at saleiterman@ualr.edu.

COMPUTER SCIENCE STUDENTS OF DISTINCTION UPDATE

The [April newsletter](#) announced the Arkansas Academy of Computing (AAoC) is looking for outstanding students who have demonstrated their commitment to Computer Science education to be recognized as 2021 Computer Science Students of Distinction (CSSoD). Since then, there have been two updates regarding the program. The deadline has been extended from **April 15, 2021** to **May 31, 2021**, and the award this year for the CS Students of Distinction will not only be having their name featured on the Arkansas Academy of Computing website, but it will include an award valued at \$100.00.



UPCOMING TRAINING

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